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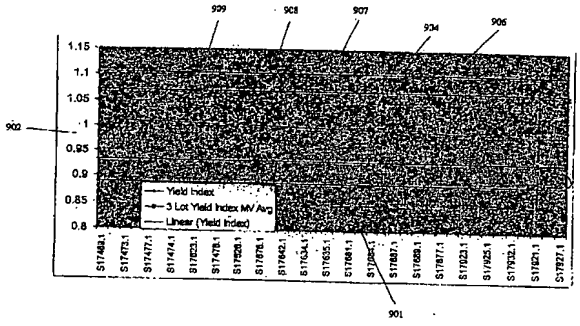
(54) Title: SYSTEM AND METHOD FOR PROCESS DEGRADATION AND PROBLEMATIC TOOL IDENTIFICATION



(57) Abstract: A method and system are provided for detecting suspect production tools. Comprising, testing produced products using a test sequence, said testing producing yield data, said yield data related to a production batch and a production process, said production process identified with a process tool. For each production process a first data series R1 is calculated and stored, each element of said first series is the yield of a production batch divided by a baseline yield. For each production process a second data series R2 is calculated and stored, each element of said second series is an m consecutive element moving average of R1. Also calculated and stored are a simple linear regression of R1, the standard deviations of data series R1 and R2. Lower trigger points for series R1 and R2 are calculated being 1-n standard deviations of R1 and R2 respectively for the last p or o data points. The R^2 of the simple linear regression of R1 is also calculated and stored. A set of decision rules are applied to the data series for each production process to produce a list of suspect processes, wherein each rule that is matched stores a match point against said production process. The rules include, a first rule matched when r consecutive elements of series R1 are lower than said lower trigger point of series R1, a second rule matched when s consecutive elements of series R2 are lower than said lower trigger point of series R2, and a third rule matched when R^2 is greater than a trigger point z. For each process tool the number of match points of said production processes identified with said tool is calculated; and a user is notified of said tools that have the most match points.

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